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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,060

05/02/2006

Scott Charles Schmidt

IR 3725 NP

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31684

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06/12/2009

ARKEMA INC.

PATENT DEPARTMENT - 26TH FLOOR

2000 MARKET STREET

PHILADELPHIA, PA 19103-3222

EXAMINER

CAMPANELLO, FRANCIS C

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

06/12/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,060	Applicant(s) SCHMIDT ET AL.	
	Examiner FRANK C. CAMPANELL	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/02/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8-10, 14-25, 27-29, and 33-37 rejected under 35 U.S.C. 102(b) as being anticipated by Liesen et al (US 5955405).

3. Regarding claims 1-10, 14-29 and 33-37, Liesen teaches a thickened oil lubricating composition (abstract) that contains 0.001 to 20% of a block copolymer (column 5 lines 60-70) and 60 to 99% a base lubricant oil (column 6 lines 14-40). The copolymer is in block form (column 5 lines 8-15). The copolymer has an oil soluble polymer block with a solubility parameter of 14-18 $(\text{J/m}^3)^{1/2}$ (the solubility parameter is not stated, but it is inherent that C16-C30 alkyl methacrylates have such a solubility parameter. See claim 1, abstract). The copolymer has an oil soluble polymer block with a solubility parameter of over 20 $(\text{J/m}^3)^{1/2}$ (the solubility parameter is not stated, but it is inherent that butyl methacrylates have such a solubility parameter. See claim 1, abstract). The polymer is formed from all (100%) acrylic monomers. It is inherent that such a polymer is amphiphilic. The polymer is made via radical polymerization (column 3 lines 40-60). The copolymer is multifunctional column 1 lines 18-22). The oil comprises (alternately) a hydraulic fluid, transmission fluid, and motor oil. (column 8 lines 4-25) The oil may contain other additives such as detergents, antifoaming agents,

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and anticorrosion agents. (Column 6 lines 8-14) Liesen does not specifically state the use of controlled radical polymerization via a nitroxide-mediated method, but does state the use of radical polymerization. However the additive polymer is a copolymer that fits all the limitations present in the instant application. The polymer as stated in claim 1 of the instant application is not patentably distinct from the product polymer additive of Liesen made via radical polymerization.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-10, 14-29 and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liesen et al (US 5955405) and Lai (US 6281311).

4. Regarding claims 1-10, 14-29 and 33-37, Liesen teaches a thickened oil lubricating composition (abstract) that contains 0.001 to 20% of a block copolymer

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(column 5 lines 60-70). And 60 to 99% a base lubricant oil (column 6 lines 14-40). The copolymer is in block form (column 5 lines 8-15). The copolymer has an oil soluble polymer block with a solubility parameter of $14-18 \text{ (J/m}^3)^{1/2}$ (the solubility parameter is not stated, but it is inherent that C16-C30 alkyl methacrylates have such a solubility parameter. See claim 1, abstract). The copolymer has an oil soluble polymer block with a solubility parameter of over $20 \text{ (J/m}^3)^{1/2}$ (the solubility parameter is not stated, but it is inherent that butyl methacrylates have such a solubility parameter. See claim 1, abstract). The polymer is formed from all (100%) acrylic monomers. It is inherent that such a polymer is amphiphilic, in the alternative this is an obvious variant. The polymer is made via radical polymerization (column 3 lines 40-60). The copolymer is multifunctional column 1 lines 18-22). The oil comprises (alternately) a hydraulic fluid, transmission fluid, and motor oil. (column 8 lines 4-25) The oil may contain other additives such as detergents, antifoaming agents, and anticorrosion agents. (Column 6 lines 8-14) Liesen does not specifically state the use of controlled radical polymerization via a nitroxide-mediated method.

5. Lai et al teaches a block methacrylate copolymer (abstract) that is formed via controlled free radical polymerization that is nitroxide mediated. (column 5 lines 1-35). Lai does not specifically state the solubility parameter of the copolymer blocks. but does use block form of butyl methacrylates. (column 10 lines 58-65) It would have been obvious to one of ordinary skill in the art at the time of the invention to use nitroxide-mediated controlled radical polymerization in the invention of Liesen as shown in Lai. Liesen already calls for use of radical polymerization, and Lai already shows

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such polymerization is known for use with methacrylates. Nitroxide-mediated controlled radical polymerization has many advantages that are known in the art, those listed in Lia include use with methacrylate with high efficiency, they are easily synthesized, and have highly controlled reaction rates, introduce functionality, and have an improved shelf life. (column 2 lines 45-55)

6. Claims 11-13 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liesen et al (US 5955405) and Lai (US 6281311) and Beimesch (US 4537696).

7. To see what Liesen and Lai teach, please see the rejection of claim 1 above. Liesen and Lai do not specifically state the use of a lubricating oil with a viscosity index of over 250. Beimesch teaches a lubricant hydraulic fluid that includes a polymethacrylate viscosity index improver. (abstract, column 1 lines 11-27) These hydraulic lubricant include those with a viscosity index of over 200 and over 250. (see examples B, D, F in tables found in column 8) Beimesch does not specifically state the polymethacrylate of claim 1 in the instant application. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the methacrylate copolymer of Liesen in the invention of Beimesch. The copolymer of Liesen has the advantage of being an excellent viscosity index improver (column 2 lines 18-20) and is already stated use for as in a hydraulic oil. (see rejection of claim 1 above) In the alternative, Beimesch provides evidence that hydraulic oils with copolymer polymethacrylates viscosity index improvers and viscosity index over 250 are well known in the art, and therefore obvious.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANK C. CAMPANELLO whose telephone number is (571)270-3165. The examiner can normally be reached on Mon-Fri 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FCC

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797